thinning flakes of the kind that dominated in the North Locus were recovered. The Southwest Locus also yielded a higher percentage of quartz. The most productive units in the Southwest Locus were Test Unit 3, in the center of the locus, which yielded 36 flakes and a quartz biface, and Test Unit 5, near the old shoreline, which yielded 33 flakes.

Most of the Southwest Locus had been plowed, but a small area along the lower slope and adjacent to the former shoreline had not. However, the unplowed portion of the slope, examined in Test Unit 12, had been severely eroded, and most of the artifacts recovered were near the surface. Although the area along the old shoreline appeared too flat for erosion to have been a significant problem, the soil was nevertheless deflated, and most of the prehistoric material in Test Unit 5 was recovered from the top 4 centimeters of the soil. Some flakes were recovered from beneath this thin A-horizon, but a wire nail was recovered from the depth of the deepest prehistoric artifacts. Test Units 3 and 15 were excavated in the plowed portion of the locus. In Test Unit 15, the subplowzone soils were sterile. In Test Unit 3, artifacts were recovered from the top 15 centimeters of the subplowzone strata. This soil, a yellowish brown silt, showed evidence of root disturbance (Figure 87). The area from which artifacts were recovered from below the plowzone, as defined in the shovel tests, was small, less than 10 meters across. Excavations in other parts of the site yielded little prehistoric material, no more than 16 artifacts per test unit.

A thin scatter of nineteenth-century material, such as whiteware, redware, and cut nails, was recovered from all the units near U.S. Route 13. This material, not sufficient to indicate a residence on the Appoquinimink South Site, probably represents a house site destroyed by the highway or by the excavation of the borrow pit on the northern side.

4. Summary

The Appoquinimink South Site appeared to represent a microband base camp occupied during at least the Woodland II period and possibly other periods. Substantial quantities of prehistoric lithics and ceramics—200 flakes and 13 ceramic sherds from one test unit—were recovered from the North Locus, a gently sloping ravine leading down to the river. The largest group of these ceramics has been identified as Minguannan, a Woodland II variety. However, all these artifacts were recovered from plowzone or slopewash soils. In the Southwest Locus, 70 meters away, no ceramics were recovered, and this locus may represent an earlier occupation. Most of the Southwest Locus had also been plowed. In addition, approximately half of the site had been destroyed by the construction of houses and driveways, associated grading, and the installation of gas lines and other utilities.

J. SITE 7NC-G-151, THE WHITBY BRANCH SITE

1. Site Description

The Whitby Branch Site (7NC-G-151) was a prehistoric site located along a marshy tributary of the Appoquinimink River in New Castle County (see Figure 41; Figure 88). The site was

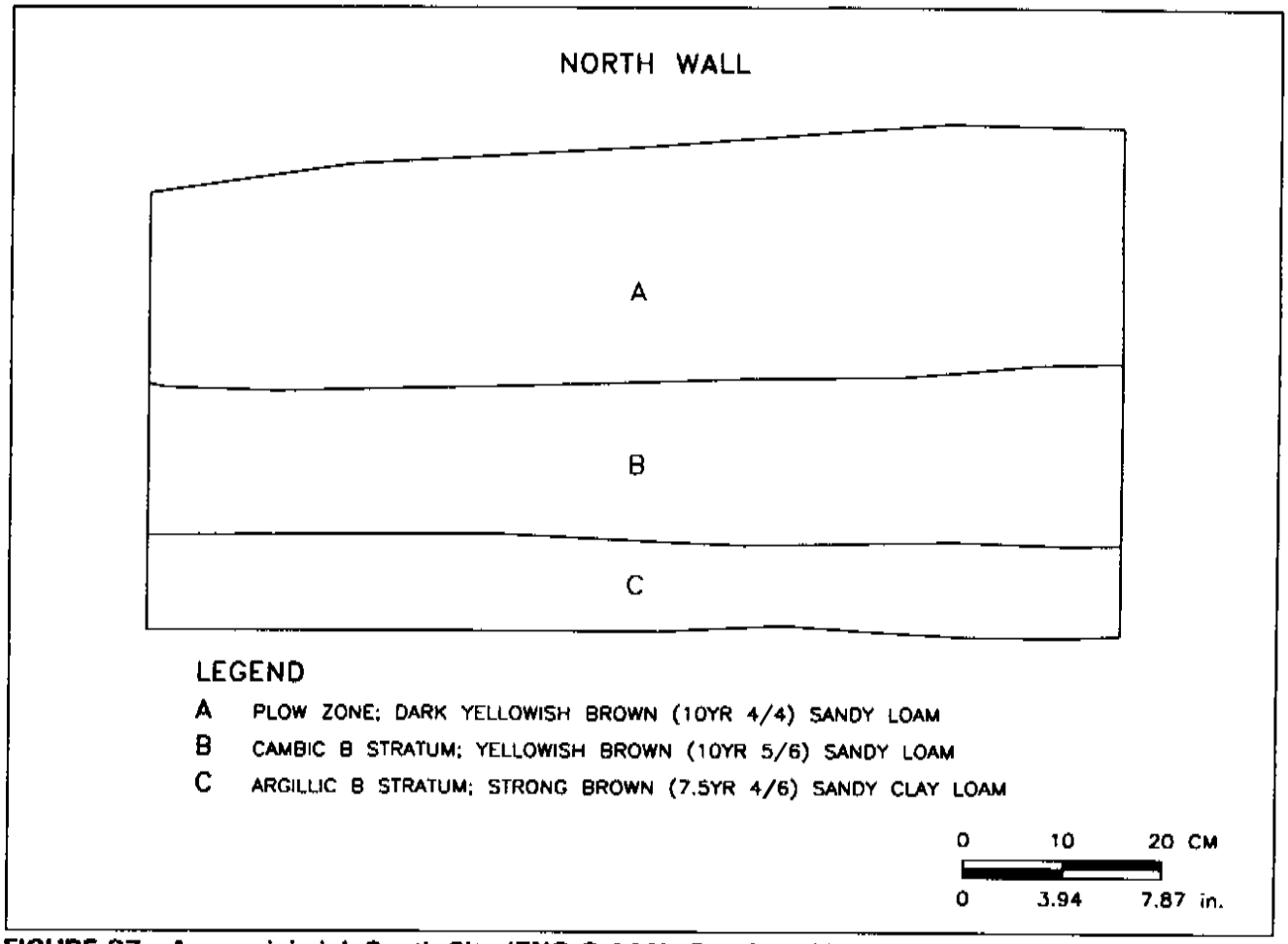

FIGURE 87: Appoquinimink South Site (7NC-G-141), Stratigraphic Profile of Test Unit 3

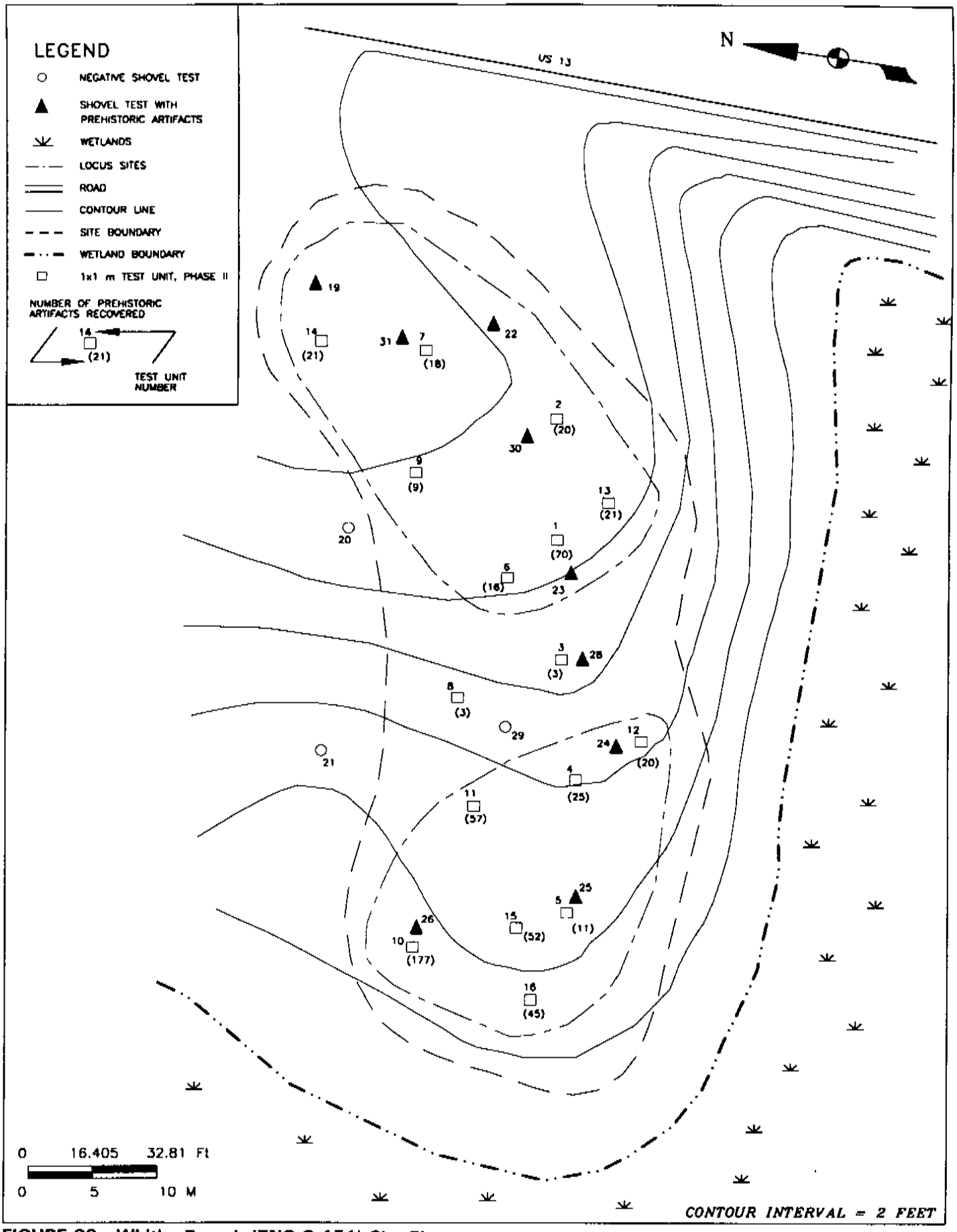

FIGURE 88: Whitby Branch (7NC-G-151) Site Plan

bounded on the east by U.S. Route 13, on the west by tidal marsh, on the south by another wetland area, and on the north by a shallow swale. The site had an uneven, amoeboid shape, but was roughly 60 meters in its longest dimension (east-west) and approximately 20 meters in width (200x65 feet).

The Whitby Branch Site was initially identified during the survey of storm water management ponds associated with SR 1, in the SWM pond survey area designated O-2 (LeeDecker 1996). Shovel testing on a sloping terrace overlooking Whitby Branch, a tidal tributary of the Appoquinimink River, recovered prehistoric debitage and a possible hammerstone. The site measured approximately 20 by 60 meters, and part of the site did not appear to have been plowed. Because the site seemed to possess a high degree of integrity, and because at least one locus of high artifact density was present, Phase II testing was recommended.

2. Environmental Setting

The site was bounded on the west by wetlands along Whitby Branch, a tidal tributary of the Appoquinimink River, and on the south by a small marshy stream. The site terrain consists of a low ridge bounded on the south by a first-order drainage and on the west by Whitby Branch, a tidal arm of the Appoquinimink River. The ridge landform exhibits a moderate 7 to 15 percent slope toward the drainage to the south, and an average westward slope of 5 percent, which flattens to near horizontal at the western margin of the site. The site area supported a modest number of small and medium-sized trees, including cedar, poplar, and pine. The well-drained soil was classified as Mattapeake silty loam (2% to 5% slope).

At the time of the testing, the site was wooded. The larger trees were mainly oak and tulip poplar, with surprisingly little undergrowth for such a temperate ecosystem. Marsh vegetation to the west and south was typical of regional wetland areas. The presence of numerous cattails (*Typha latifolia*) indicates that both wetland areas were probably charged mostly with fresh water and were only inundated by the highest tides. The wetland area to the south appeared to be exclusively fresh water. The presence of such freshwater wetland (as opposed to tidal wetland) results in higher local species diversity.

3. Phase II Testing

The Phase II testing of Site 7NC-G-151 (the Whitby Branch Site) was carried out by the excavation of 16 test units. A total of 608 prehistoric lithic artifacts—178 FCR and one prehistoric ceramic—were recovered. Table 24 summarizes the lithic artifacts recovered during Phase I and II investigations. Temporally diagnostic artifacts include a fragment of pottery tentatively identified as Wolfe Neck, an Early Woodland variety (Griffith 1982), and a grooved axe and a corner-notched projectile point which may also be assignable to the early Woodland I period (Plate 18).

Phase II testing confirmed the dimensions of Site 7NC-G-151 as approximately 60 meters (east-west) by 20 meters (200x65 feet). The site lay at an elevation of 1.5 meters to nearly 5 meters

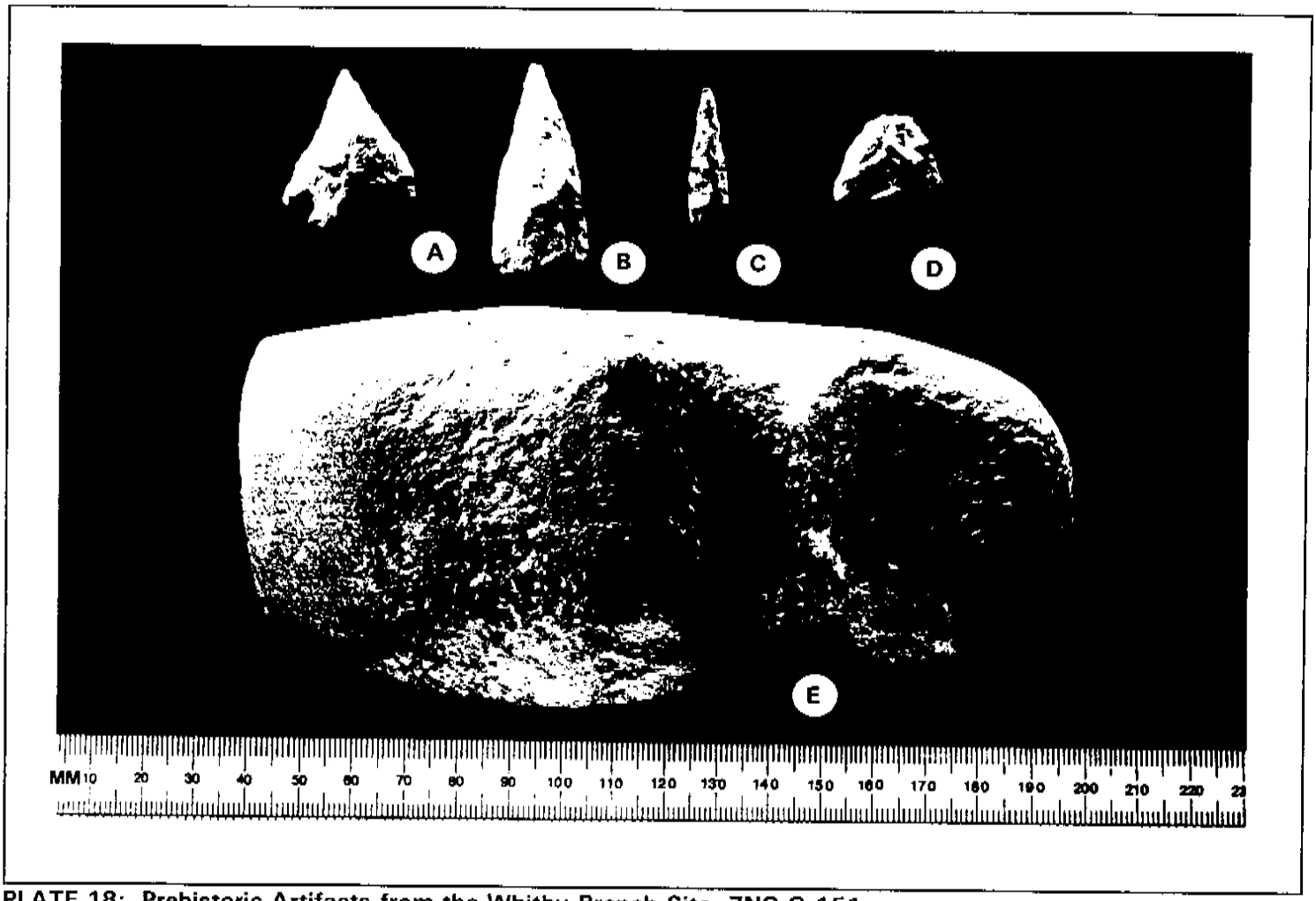

PLATE 18: Prehistoric Artifacts from the Whitby Branch Site, 7NC-G-151

A) Jasper Corner-notched Projectile Point from Test Unit 11, Stratum B (96/16/38)
B) Quartz Biface from Test Unit 10, Stratum B (96/16/34)
C) Rhyolite Drill from Test Unit 7, Stratum B (96/16/26)
D) Chert Endscraper from Test Unit 15, Stratum B (96/16/56)
E) Quartzite Ax from Test Unit 1, Stratum B (96/16/3)

TABLE 24 **SUMMARY OF PREHISTORIC LITHIC ASSEMBLAGE SITE 7NC-G-151**

	RAW MATERIAL							
ARTIFACT TYPE	Quartz	Chert	Quartzite	Jasper	Rhyolite	Metased.	Not Assgn*	TOTAL
Bifaces								
Projectile Point	1	.	.	1	.	.	.	2
Early-Stage Biface	.	1	2	.	.	.	.	3
Middle-Stage Biface	1	.	.	.	.	.	.	1
Ind. Biface Fragment	2	.	.	.	.	.	.	2
Chopper	.	.	1	.	.	.	.	1
Drill	.	1	.	.	.	.	.	1
Unifaces								
Endscraper	.	1	.	.	.	.	.	1
Utilized Flakes	.	.	.	2	.	.	.	2
Groundstone								
Grooved Axe	.	.	1	.	.	.	.	1
Cores								
Freehand Core	.	4	.	3	.	.	.	7
Tested Cobble	1	.	.	.	.	.	.	1
Debitage								
Flake Fragments	53	34	16	17	3	1	1	125
Block Shatter	14	9	3	10	.	.	.	36
Decortication Flakes	12	17	4	12	3	1	.	49
Early Reduction Flakes	73	32	50	23	.	4	1	183
Biface Reduction Flakes	4	7	1	2	1	.	.	15
Fire-Cracked Rock	.	.	.	.	.	.	178	178
TOTALS	161	106	78	70	7	6	180	608

*Not Assigned; usually refers to fire-cracked rock; Metased. = Metasedimentary

above mean sea level, which at this locale was generally equivalent to the level of the surrounding wetland (see Figure 88).

The majority of the artifacts recovered from the site were excavated from two portions of the site, designated the East Locus and the West Locus. Both loci measured approximately 20 by 25 meters. The East Locus has been minimally plowed, and the West Locus has never been plowed. The East Locus was situated on higher ground in the eastern portion of the site, above the 3.5-

meter contour. The West Locus was situated on lower ground, between the 2- and 2.5- meter contours. The six test units in the West Locus yielded approximately 70 percent of the FCR and debitage from the site and nearly 60 percent of the tools. These two loci were separated by two test units that yielded only three artifacts each.

In addition to the heavier concentration of artifacts in the West Locus, two features were identified in this portion of the site—Feature 1 in Test Unit 5, and Feature 2 in Test Unit 10. Both features were FCR clusters and may represent remnant surface hearths. Unfortunately, neither pit outlines nor soil staining were observed in association with these FCR clusters. The absence of charcoal could be explained by the effects of weathering on exposed hearth elements. These two features could also be container dumps resulting from food preparation activities at the site. No charcoal would be expected in this case. Features 1 and 2 both occur between 10 centimeters and 20 centimeters below ground surface, and together account for approximately 40 percent of the FCR recovered at the Whitby Branch Site. Test Units 5 and 10 similarly account for 40 percent of the total artifact sample from the site, suggesting that much of the activity of the site's occupants was centered around Features 1 and 2.

The artifact distribution in the West Locus centered on Test Unit 5 (N=77) and Test Unit 10 (N=177). Test Unit 10 yielded 120 waste flakes and 51 FCR, as well as a late-stage biface tip, a unifacial scraper, a hammerstone, and an anvil stone. Test Unit 5 contained 57 waste flakes, 18 FCR, a middle-stage biface, and a contracting-stemmed point base. Contracting-stemmed points are assignable to the pre-ceramic phase of the Woodland I period. A jasper corner-notched projectile point was retrieved from the base of Level 2 in Test Unit 11. Manufactured from a flake, this specimen resembles a Vosburg-like point of the Late Archaic Laurentian tradition in New York State. The Whitby Branch Site locale falls within the southernmost limits of the Vosburg point type, and the date range assigned to Vosburg points by Funk (1976), 5400-4800 years BP, puts them at the earliest pre-ceramic phase of Woodland I. It must be noted, however, that Custer (1989) questions the validity of this type in Delaware. Acquisition of additional specimens from the site may result in the typological reassignment of this projectile point to later in the Woodland I period. Other tools recovered from the West Locus include three bifaces, five cores, and two hammerstones.

Test Unit 1 was the most productive unit in the East Locus with respect to artifact frequency, yielding a total of 70 artifacts, including a three-quarter-grooved stone axe. This specimen was recovered from Level 3, and exhibits a finely-ground bit with a minimum of edge wear. A large quantity of FCR (N=37) was recovered from Levels 2-4, although discrete clustering was not observed. This may represent a scattered hearth whose elements have been further heaved by frost/thaw cycles.

Test Unit 2 yielded a large ceramic fragment from Level 2. Tentatively identified as Wolfe Neck ware, this specimen is thick walled, with large crushed quartz temper, and exhibits a surface treatment composed of net or fabric impressions. Wolfe Neck ware, a diagnostic of Custer's (1984, 1989) Wolfe Neck Complex, has been radiocarbon-assayed to between 2240 and 2455 years BP in Delaware. Other tools recovered from the East Locus include a drill, an early-stage bifacial knife or chopper, six cores, a hammerstone, and a grinding stone.

The artifact-bearing strata at Whitby Branch extended from the surface to approximately 40-50 centimeters below ground surface. The West Locus occupied the shallow end of this continuum, with the East Locus tending toward the deeper end. The generally less compact soil matrix in the East Locus may have allowed for the downward transport of some artifacts. Test Unit 3 (N=3) and Test Unit 8 (N=3) were located on the steepest portion of the westward slope, and represented an intermediate zone between the East and West loci. Low artifact frequencies were matched by the shallow recovery (less than 30 cm. below surface) of each unit sample.

Soils of the Whitby Branch Site were variable. Soil at higher elevations of the site (to the east) was classified as a Rumford series, gravelly phase soil (Figure 89). This eastern portion of the site had only been plowed a few times. Gravel deposits in this soil have made tree growth precarious. Substantial deciduous trees with large leaf sails often uproot in these soils. It would therefore be expected to encounter the occasional disturbed area in site profiles. Soil in lower elevations of the site (to the west) was classified as a Sassafras sandy loam. This portion of the site had never been plowed, and the natural profile was completely intact. It had received little slopewash. The profile showed some mottling, evidence of ground water entry (Figure 90). Both profiles indicated that the site surface has been intact over the last 15,000 to 20,000 years (see Appendix H).

4. Summary

The Whitby Branch Site appeared to represent what Delaware archaeologists refer to as a Woodland I period (3000 BC to AD 1000) procurement site, or possibly even a microband base camp (Custer 1994). In other chronological frameworks, commonly used in the eastern woodlands, it would fall within the Late Archaic and Early to Middle Woodland subperiods. The majority of the artifacts recovered were excavated from two portions of the site, designated the East Locus and West Locus. Both loci measured approximately 20 by 25 meters. The East Locus had been minimally plowed, and the West Locus had never been plowed. The East Locus was situated on higher ground in the eastern portion of the site, above the 3.5-meter contour. The West Locus was situated on lower ground, between the 2- and 2.5-meter contours. The six test units in the West Locus yielded approximately 70 percent of the FCR and debitage from the site and nearly 60 percent of the tools. These two loci were separated by two test units that yielded only three artifacts each.

In addition to the heavier concentration of artifacts in the West Locus, two features were identified in this portion of the site—Feature 1 in Test Unit 5, and Feature 2 in Test Unit 10. Both features are FCR clusters and may represent remnant surface hearths.

K. SITE 7NC-G-139, THE PINE CIRCLE SITE

1. Site Description

The Pine Circle Site (Site 7NC-G-139) was a small prehistoric site located east of U.S. Route 13, 1,500 meters (1 mile) south of Odessa. The site measured approximately 20 meters north-south